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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,962	10/15/2003	Peter Hazucha	42P15901	8829

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EXAMINER	
TON, MY TRANG	

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CT

Office Action Summary	Application No.	Applicant(s)	
	10/686,962	HAZUCHA ET AL.	
	Examiner	Art Unit	
	My-Trang N. Ton	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner. for examination purpose only

10)☒ The drawing(s) filed on 15 October 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

MY-TRANG NU TON
PRIMARY EXAMINER

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Drawings

The informal drawings filed on 10/15/03 are acceptable for examination purpose only.

Claim Objections

Claim 19 is objected to because of the following informalities: in line 5, after "terminals", insert -- ; --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the limitation "a first output port and a second output port" is left dangling.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12, 15-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Garrity et al (U. S Patent No. 5,894,284).

Garrity et al disclose in Fig. 6 a circuit including:

a switched capacitor transformer (504) comprising:

a first capacitor (614) comprising a first terminal (connected between 620 and 630) and a second terminal (connected between 632 and 622);

a first input port (VAGO) and a second input port (VAG); and

a first output port (+VRESIDUE) and a second output port (-VRESIDUE); and

a clock generator (p2, p1) having a cycle of operation (clock phase p1, clock phase p2) and coupled to the switched capacitor transformer (504) so that the first and second terminals (connected between 620 and 630, 632 and 622) of the first capacitor (614) are coupled to the first and second input ports (VAGO,VAG), respectively, during a first portion of the cycle of operation (when 630 and 632 are ON) as recited in claim 1.

Regarding claim 2: wherein the first and second terminals (connected between 620 and 630, 632 and 622) of the first capacitor (614) are coupled to the first and second output ports (+VRESIDUE, -VRESIDUE), respectively, during a second portion of the cycle of operation (when 620, 622 are ON).

Regarding claim 3: the first and second portions of the cycle of operation are non-overlapping (during clock phase P2, 630 are enabled & during clock phase P1, 620 are enabled), and there is no portion of the cycle of operation for which the first terminal of the first capacitor is coupled to both the first input port and the first output port or for which the second terminal of the first capacitor is coupled to both the second input port and the second output port (see col. 6, lines 32 – 43).

Regarding claim 4: a voltage reference circuit (circuit provides VAGO, VAG (not shown)) to provide a reference differential voltage at the first and second input ports.

Claim 5 is similarly rejected as claim 4.

Regarding claim 6: a functional unit (circuit provides +VRESIDUE, -VRESIDUE (not shown)) responsive to an output differential voltage developed at the output ports.

Claim 7 is similarly rejected as claim 6.

Regarding claim 8:

a second capacitor (610) comprising a first terminal (connected between 620, 670) coupled to the first input port and a second terminal (connected between 622, 672) coupled to the second input port; and

a third capacitor (664) comprising a first terminal coupled to the first output port (+VRESIDUE) and a second terminal coupled to the second output port (-VRESIDUE).

Claim 9 is similarly rejected as claim 8.

Regarding claim 10:

a first capacitor (614) comprising a first terminal (connected between 620 and 630) and a second terminal (connected between 622 and 632);

a first input port (VAGO) and a second input port (VAG);

a first output port (+VRESIDUE) and a second output port (-VRESIDUE);

a first switch (630) comprising a first terminal connected to the first terminal of the first capacitor and a second terminal connected to the first input port;

a second switch (632) comprising a first terminal connected to the second terminal of the first capacitor and a second terminal connected to the second input port;

a third switch (620) comprising a first terminal connected to the first terminal of the first capacitor and a second terminal connected to the first output port; and

a fourth switch (622) comprising a first terminal connected to the second terminal of the first capacitor and a second terminal connected to the second output port.

Regarding claim 11: a clock generator having a cycle of operation to switch the first and second switches ON (630 and 632 ON) during a first portion of the cycle of operation and to switch the third and fourth switches ON (620, 622 ON) during a second portion of the cycle of operation; wherein the first and second portion of the cycle of operation are disjoint (cycle phase P1, cycle phase P2 are disjoint).

Regarding claim 12: wherein for no portion of the cycle of operation does the clock generator switch the first and third switches both ON, the first and fourth switches both ON, the second and third switches both ON, or the second and fourth switches both ON (630 and 632 switches ON depends on p2; 620 and 622 switches ON depends on p1, see col. 6, lines 32-43, col. 7).

Claims 15-16 are similarly rejected as claim 8.

Claims 17-18 are similarly rejected as claims 5-6.

Claim 19 is similarly rejected as claim 10: a first input port and a second input port (VAGO and VAG); a first output port and a second output port (+VRESIDUE, -

VRESIDUE); a capacitor (614), a first switch (630), a second switch (632), a third switch (620) and a fourth switch (622).

Claim 20 is similarly rejected as claims 11-12.

Claim 21 is similarly rejected as claims 5-6, 17-18.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrity et al as applied to claim 10 above.

As stated above, every element of the claimed invention recited in above claims can be seen in the circuit of Garrity. However, this reference does not show the "pMOSFETs, nMOSFETs" (claim 13).

However, field effect transistors are well-known switching devices and patentable equivalent to switches since no unobvious results are seen produce from there use. Therefore, it would have been obvious at the time of the invention was made for one skilled in the art to utilize these particular types of transistors (MOSFETs) because of their well-known advantages in performance and integration. MOSFETs have very short switching times and very low electrical power consumption. Furthermore, regarding "first and third switches are pMOSFETs" and "second and fourth switches are nMOSFETs", it would have been obvious at the time of the invention was made for one skilled in the art

to utilize first and third switches (630, 620: seen as pull up switches) are pMOSFETs and second and fourth switches (632, 622: seen as pull down switches) are nMOSFETs so that these transistors operate in saturation mode rather than follower mode.

Claim 14 is similarly rejected as claim 8.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

My-Trang N. Ton
Primary Examiner
Art Unit 2816

February 17, 2005